

Work Order ID 66009

Tuesday, February 01, 2011 1:18:05 PM



Page 1

**Item ID:** D3391-025

Accept



Setup Start



**Revision ID:**

**Item Name:** Aft Tube Assembly

Stop



**Start Date:** 2/2/2011      **Start Qty:** 1.00



**Cust Item ID**

**Required Date:** 2/16/2011      **Req'd Qty:** 1.00



## **Customer**

### **Reference:**

#### **Approvals:**

Process Plan: VMF

Date: (1-62-01).

Tooling

Date:

Run Start



96

Date:

SPC (Y/N)

Date:

Stone



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

2/11/10

HAAS CNC vertical machine #1

1-Machine as per Folio FA 599 Rev: A & Dwg D3391 Rev: A  
2-Deburr

130



QC2- Inspect parts off machine FAI/FAIB

0.00

2/11/10

QC

Memo

0.00

Quality Control

140



QC8- Inspect parts - second check

0.00

2/11/10

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150



Skidtubes

0.00

11-2-22

Skidtubes

Memo

0.00

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

160



BENDING MACHINE - SKIDTUBES

0.00

11-2-22

CNC Bend 1

Memo

0.00

Form as per Dwg D3391 Using Bend Prog 3391025

170



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



Skidtubes

0.00

Skidtubes

Memo

0.00

Skidtubes

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only)

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217  
Wearplate Jig

\*\*\*\*\*Do Not Open To Finished Size\*\*\*\*\*

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2  
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per  
Dwg D3391.

7-Deburr

11-2-22

W/O:		WORK ORDER CHANGES					
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Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

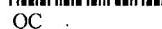
QC5- Inspect part completeness to step on W/O

0.00

SMU/23

0.00

H



QC

Memo

Quality Control

200

Chemical Conversion Coat per QSI005 4.1

0.00

0.00

XU



HandFinish

Memo

Hand Finishing

B  
11/02/23

210

QC3- Inspect Part Finish

0.00

0.00

R



QC

Memo

Quality Control

Q  
8E4/02/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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<b>Item ID:</b>	D3391-025	<b>Accept</b>		<b>Setup</b>	<b>Start</b>				
<b>Revision ID:</b>									
<b>Item Name:</b>	Aft Tube Assembly								
<b>Start Date:</b>	2/2/2011	<b>Start Qty:</b> 1.00		<b>Cust Item ID:</b>					
<b>Required Date:</b>	2/16/2011	<b>Req'd Qty:</b> 1.00		<b>Customer:</b>					
<b>Reference:</b>									
<b>Approvals:</b>	<b>Process Plan:</b> _____	<b>Date:</b> _____	<b>Tooling:</b> _____	<b>Date:</b> _____	<b>Run</b>	<b>Start</b>			
	<b>QC:</b> _____	<b>Date:</b> _____	<b>SPC (Y/N):</b> _____	<b>Date:</b> _____		<b>Stop</b>			
<b>Sequence ID/ Work Center ID</b>	<b>Operation Description</b>	<b>Set Up/ Run Hours</b>	<b>Tool ID</b>	<b>Tool #</b>	<b>Plan Code</b>	<b>Accept Qty</b>	<b>Reject Qty</b>	<b>Reject Number</b>	<b>Insp. Stamp</b>
220 	Skidtubes	0.00							
Skidtubes	<b>Memo</b> Instal spacers as per dwg D3391 A/R Magnabond 6398 Batch: <i>m116227</i> exp. date: <i>08/2011</i> cure time 12hrs as per QSI0015	0.00							
230 	QC5- Inspect part completeness to step on W/O	0.00							
QC 	<b>Memo</b>	0.00							
Quality Control									
235 	Pressure Wash per QSI005 4.3	0.00							
HandFinish 	<b>Memo</b> AND REALODINE AS PER PAR09-043	0.00							
Hand Finishing									

*BE 11/02/23*

*11 02 24 ①*  
*11 02 24 ①*  
*11 02 24 ①*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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Revision ID:

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Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

240



Powdercoat

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

MUS951

Memo

0.00

1 BR 11-2-25

Powder Coating

START TIME: 8:05 3/20  
OVEN TEMPERATURE:  
FINISH TIME: 8:35

250



QC

Quality Control

QC3- Inspect Part Finish

0.00

1 6 11/02/25

Memo

0.00

260



HandFinish

Hand Finishing

HandFinishing

0.00

1 6 11/02/25

Memo

0.00

1-Install inserts as per Dwg D3391  
 2-Install Aft Cap as per Dwg D3391  
 A/R Sikaflex-241-291 11/15/11  
 Sikaflex expiry date: 11/10/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:18:05 PM

Item ID: D3391-025

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Setup

Start



Revision ID:

Stop



Item Name: Aft Tube Assembly

Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

270

QC5- Inspect part completeness to step on W/O

0.00

5/10/28



QC

Quality Control

Memo

0.00

280

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00



Packaging

Packaging

Memo

0.00

290

QC21- Final Inspection - Work Order Release

0.00



QC

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

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Work Order ID: 66009



Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev B 06-02-07 ECN773 dwg rev. D EC  
IPP Rev:C 06-03-28 Update Manuf. Instructions JLM □□ □□  
IPP rev D 07.03.20 revF dwg EC  
IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD  
IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC  
IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6014-090 		Manufactured	No			100	Each	26.0000	1	1		 110208	

ALUMINUM EXTRUSION

Location	Loc Qty	Loc Code
LG	26	
56572	26	

D3670-4-200 	Manufactured	No			230	Each	56.0000	4	4			 110213	
-----------------	--------------	----	--	--	-----	------	---------	---	---	--	--	------------	--

Location	Loc Qty	Loc Code
LG	56	
57349	34	
63317	22	

66041 (x4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:17:59 PM

Work Order ID: 66009



Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

D2646



Aft Cap

Manufactured No.

270

Each

83.0000

1

1

*SL 1102128*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP-4	13	
------	----	--

*57332*

FP-4	13	
------	----	--

FP6	16	
-----	----	--

*52663*

FP6	16	
-----	----	--

*62678*

FP6	12	
-----	----	--

*63633*

FP6	1	
-----	---	--

Return 2010	54	
-------------	----	--

*62678*

Return 2010	54	
-------------	----	--

D3537-1



Wearpad

Manufactured No.

270

Each

54.0000

1

1

*B65057**X1 SL 1102128*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP017	54	
-------	----	--

*64424*

FP017	54	
-------	----	--

D3537-7



Wearpad

Manufactured No.

270

Each

17.0000

1

1

*SL 1102128*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP16	17	
------	----	--

*56831*

FP16	17	
------	----	--

*65146*

FP16	9	
------	---	--

FP16	8	
------	---	--



FP16	9	
------	---	--



FP16	8	
------	---	--

W/O:		WORK ORDER CHANGES					
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Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

D3553-1



Gasket

Manufactured No

270

Each

29.0000

1

1

*HL 11/02/25*

D3553-3



Gasket

Manufactured No

270

Each

33.0000

1

1

*HL 11/02/25*

D3672-1



Phenolic Washer

Manufactured No

270

Each

1,307.000

2

2

*HL 11/02/25*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	29	
33868	1	
56568	28	

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	33	
53480	33	

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST077	1307	
42329	10	
52505	297	
64177	1000	

W/O:		WORK ORDER CHANGES					
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Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

260

Each

729.0000

14

14



M1102128

Insert

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
PKG11	480	M115581
114723	480	X14
ST281	114	
116049	114	
ST282	96	
110511	10	
115911	86	
ST381	39	
114654	39	

ALS4-1032-225

Purchased

No

270

Each

4,024.000

12

12



M1102128

Insert

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
PK011	4024	
110768	4024	X12

AN3C4A

Purchased

No

270

Each

2,072.000

6

6



M1102128

BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST350	2072	
115300	25	
116075	947	
116590	100	
116704	1000	X6

W/O:		WORK ORDER CHANGES					
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Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C5A



Purchased

No

270

Each

946.0000

4

4

u102128

Bolt

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST350	946	
114330	11	
115015	13	
115371	18	
115422	100	
115594	6	
<u>115835</u>	198	
116419	500	X4
116549	100	

AN960C10L

NAS1149C0332

Purchased

No

270

Each

25.0000

10

10



u102128

washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST245	25	M116304
107534	25	V10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	66009
Description: Float Skidtube (412)	Part Number:	D3391-3
Inspection Dwg: D3391 Rev: H		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

First Article     Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.00	/		M-tape	
3.500	+/-0.010	3.504	/		Vern ML-3	
88.93	+/-0.030	88.937	/		M-tape	
44.995	+/-0.030	45.00	/		M-tape	
Ø3.200	+/-0.010	3.202	/		Mic/CNC-05	
88.93	+/-0.030	88.937	/		M-tape	
Ø3.750	+/-0.010	3.748	/		Vern ML-3	
30° x 160° chamfer	+/-0.010					

Measured by: JL

Date: 11/02/08

Audited by: OnR

Date: 11/02/08

HAAS Section						
1.526	+0.000/-0.030	1.570	-		Vern	ML-7
7.500	+/-0.010	7.498	-		Vern	CNL-02
27.750	+/-0.010	27.750	-		M-tape	ML-3
31.750	+/-0.010	31.750	-		"	"
35.250	+/-0.010	35.252	-		"	"
3.300	+/-0.010	3.310	-		Vern	CNL-02
0.200	+/-0.010	.195	-		"	ML-7
3.520	+/-0.010	3.525	-		Mic	JLM 4
0.687	+0.010/-0.000	.688	-		Vern	ML-7
R0.062	+/-0.010	R.062	-		Rad-gage	REF
Ø0.484	+0.005/-0.001	Ø.486	-		Vern	ML-7

Measured by: OnR

Date: 11/02/10

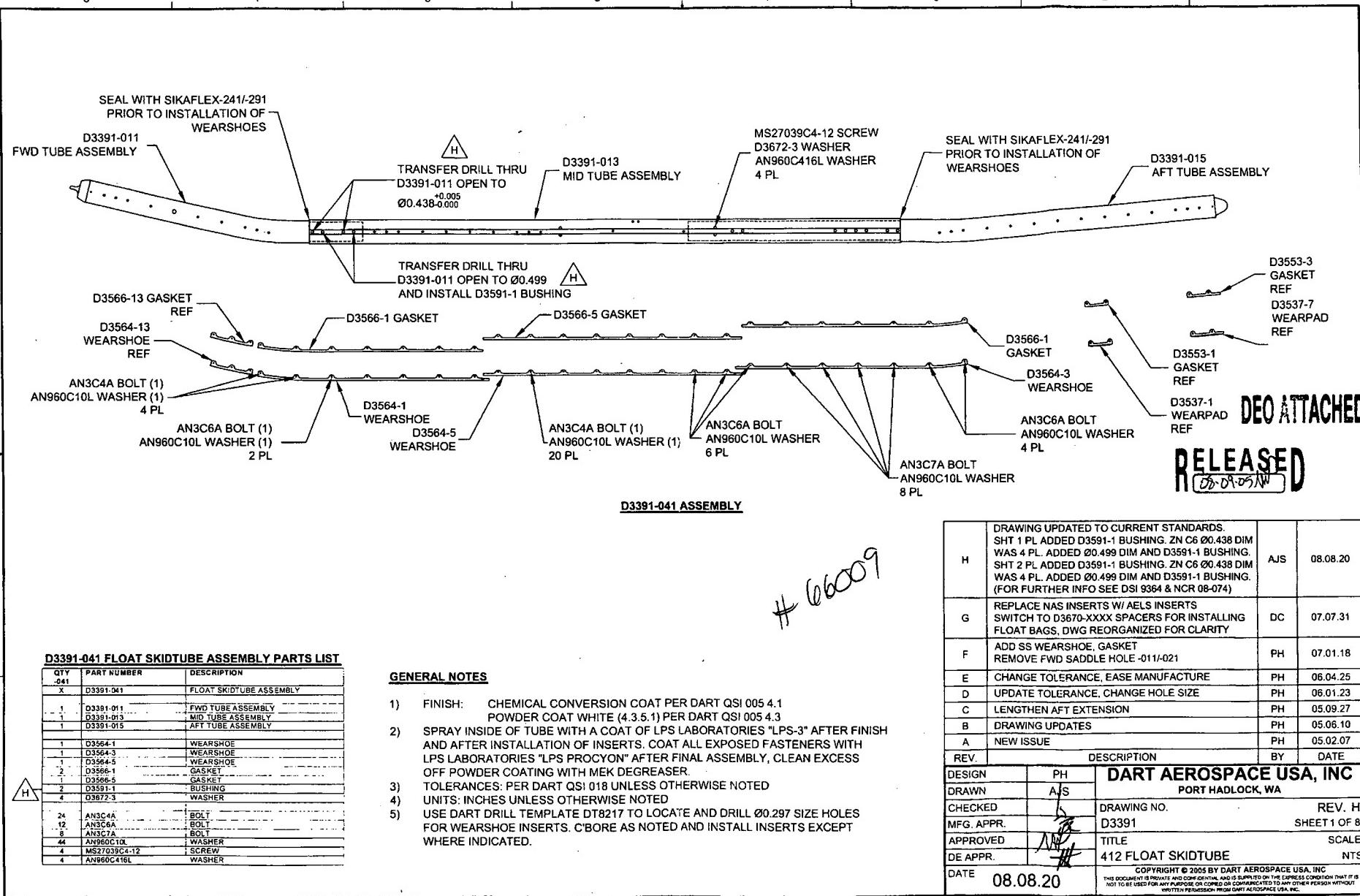
Audited by: al

Date: 11.2.15

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	<u>kg</u>
G	09.11.16	Dimension 0.200 removed	KJ	<u>AA</u>

1001

250m.



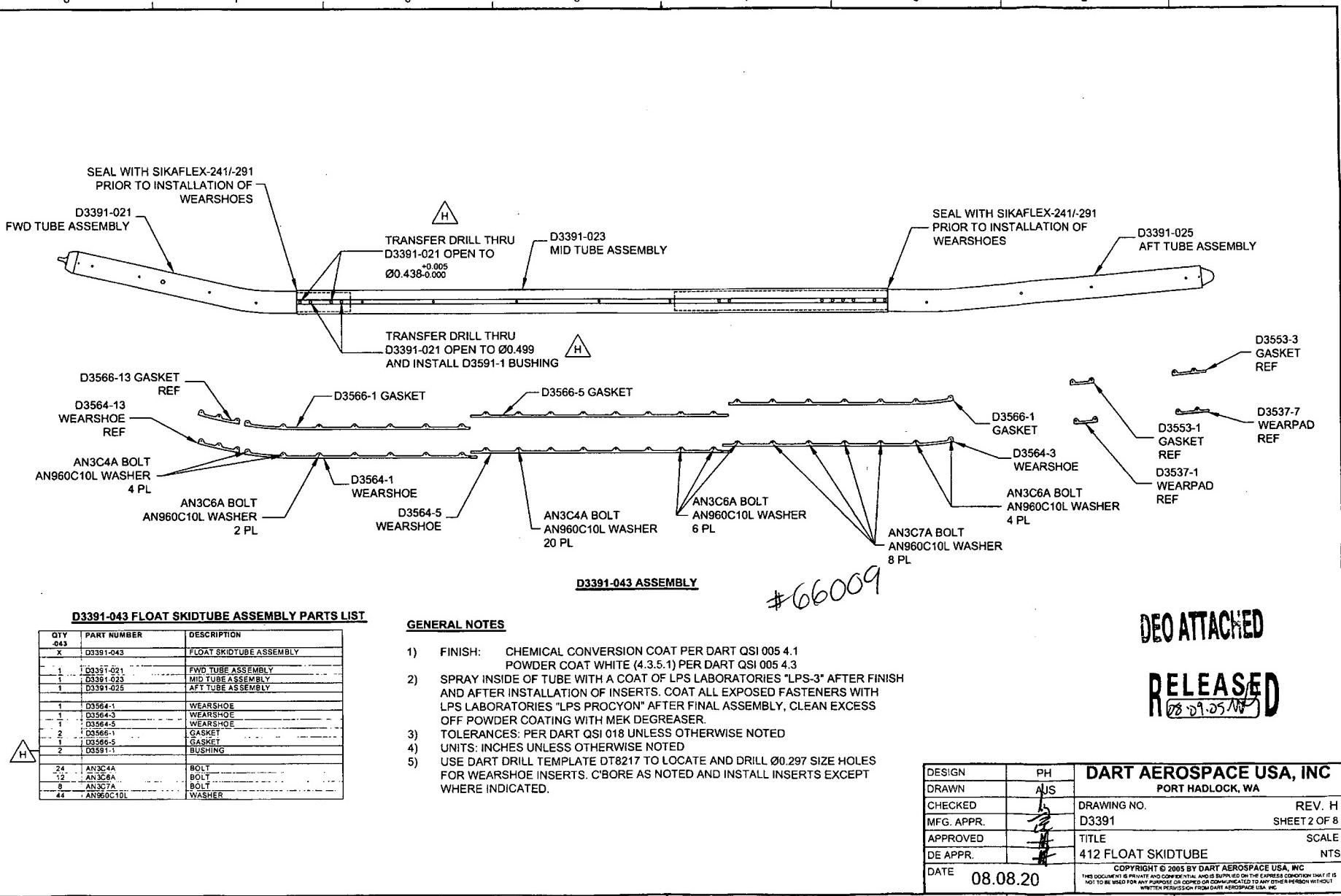
QTY	PART NUMBER	DESCRIPTION
-041		FLOAT SKIDTUBE ASSEMBLY
X	D3391-041	
1	D3381-011	FWD TUBE ASSEMBLY
1	D3381-013	MID TUBE ASSEMBLY
1	D3381-015	ATF TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3872-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3CTA	BOLT
44	AN960C10L	WASHER
4	MS2703C4-12	SCREW
4	AN960C16L	WASHER

## **GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
  - 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

H	DRAWING UPDATED TO CURRENT STANDARDS. SHIT 1 PL ADDED D3591-1 BUSHING. ZN C6 00.438 DIM WAS 4 PL. ADDED .00.499 DIM AND D3591-1 BUSHING. SHIT 2 PL ADDED D3591-1 BUSHING. ZN C6 00.438 DIM WAS 4 PL. ADDED .00.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DS1 9364 & NCR 08-074)			AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS. DWG REORGANIZED FOR CLARITY			DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011-021			PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE			PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE			PH	06.01.23
C	LENGTHEN AFT EXTENSION			PH	05.09.27
B	DRAWING UPDATES			PH	05.06.10
A	NEW ISSUE			PH	05.02.07
REV.	DESCRIPTION			BY	DATE
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>			
DRAWN	A/S	PORT HADLOCK, WA			
CHECKED		DRAWING NO.			REV. H
MFG. APPR.		D3391			SHEET 1 OF 8
APPROVED	<i>[Signature]</i>	TITLE			SCALE
DE APPR.	<i>[Signature]</i>	412 FLOAT SKIDTUBE			NTS
DATE	08.08.20		COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PROPRIETARY INFORMATION AND IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT		

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#66000

DEO ATTACHED  
RELEASED 08-09-2014

QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3367-021	FWD TUBE ASSEMBLY
1	D3381-033	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
-24	AN3044	BOLT
-24	AN3064	BOLT
8	AN307A	BOLT
44	AN5002C101	WASHER

#### **GENERAL NOTES**

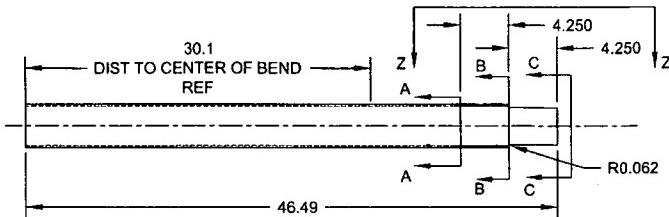
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
  - 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. CBORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED

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CHECKED	<u>      </u>	DRAWING NO.	REV. H	
MFG. APPR.	<u>      </u>	D3391	SHEET 2 OF 8	
APPROVED	<u>      </u>	TITLE	SCALE	
DE APPR.	<u>      </u>	412 FLOAT SKIDTUBE	NTS	
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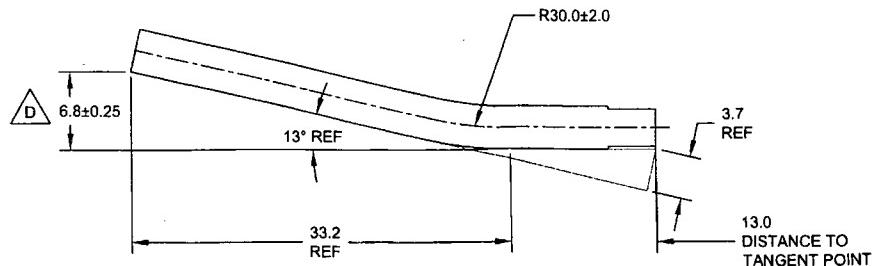
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D



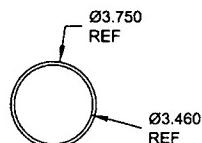
D3391-1 CUTTING DETAIL  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

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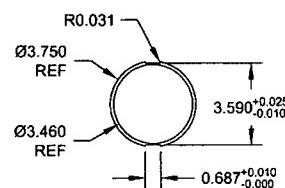


D3391-011-021 BENDING DETAIL  
(MAKE FROM D3391-1)

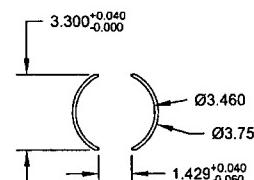
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SECTION A-A  
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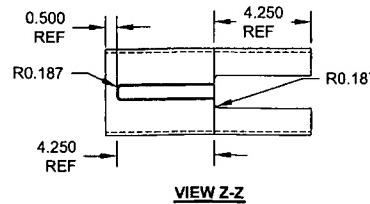


SECTION B-B  
SCALE 2X



SECTION C-C  
SCALE 2X

A



460069

DEO ATTACHED

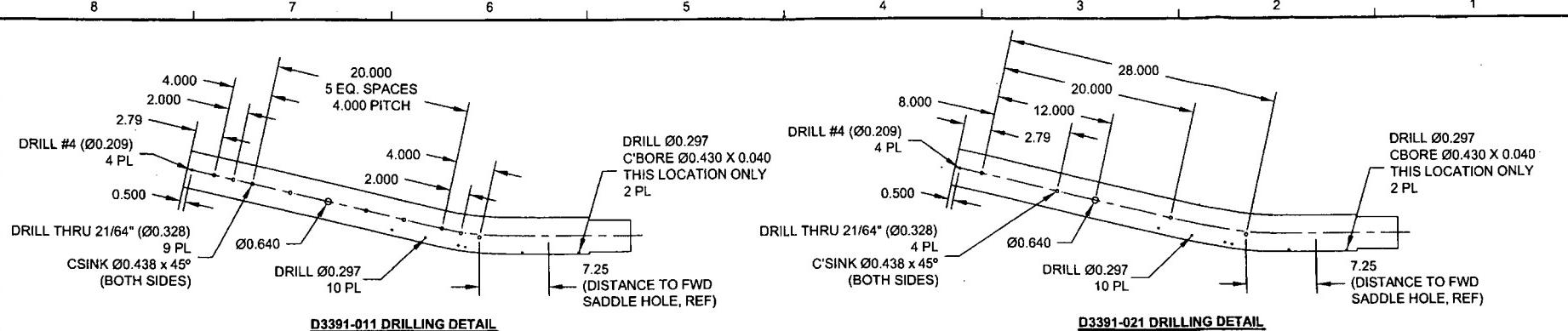
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DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AUS	PORT HADLOCK, WA
CHECKED		DRAWING NO.
MFG. APPR.		D3391
APPROVED	JAN	REV. H
DE APPR.		SHEET 3 OF 8
DATE	08.08.20	TITLE
		412 FLOAT SKIDTUBE
		NTS

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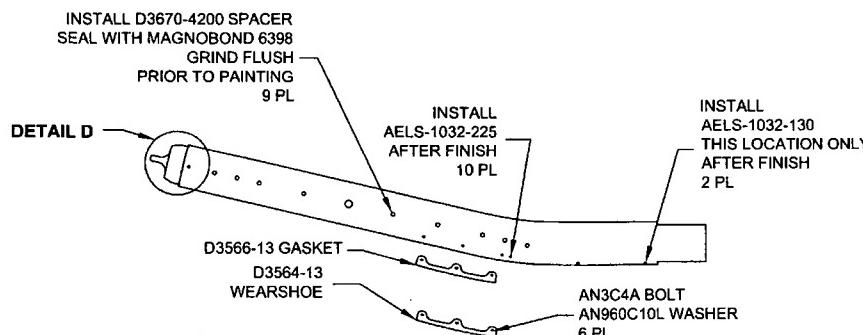
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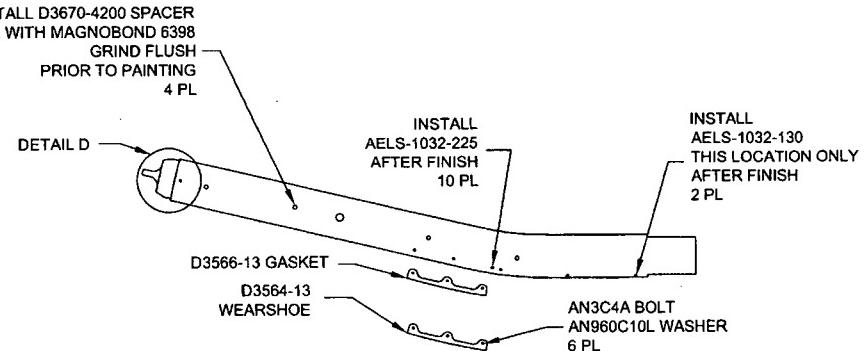


D3391-011 DRILLING DETAIL

D3391-021 DRILLING DETAIL



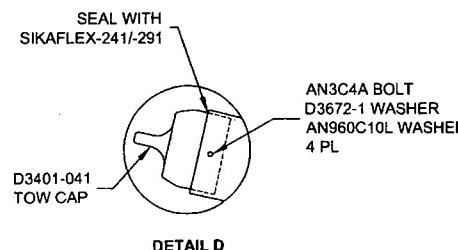
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT



DETAIL D

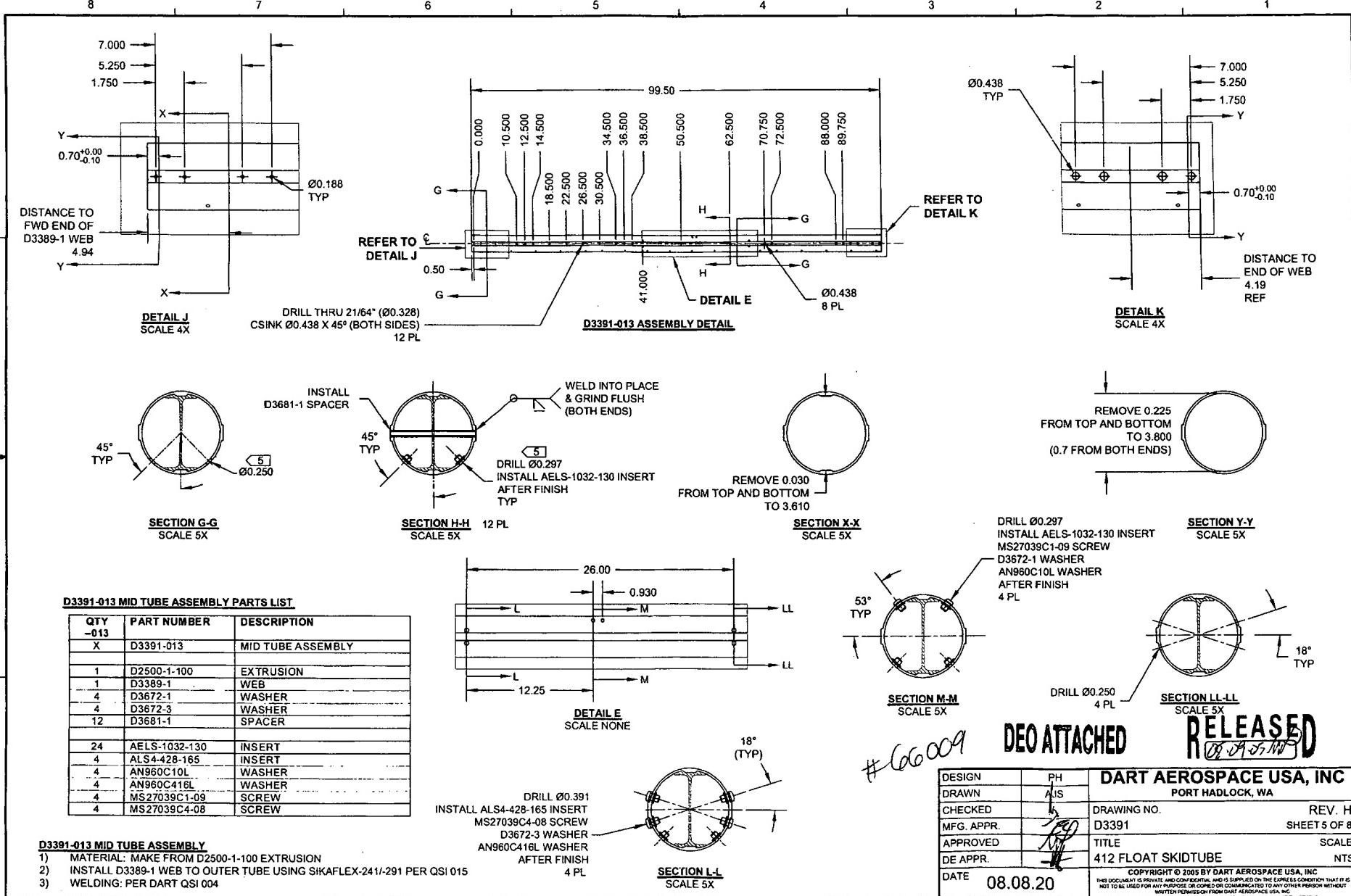
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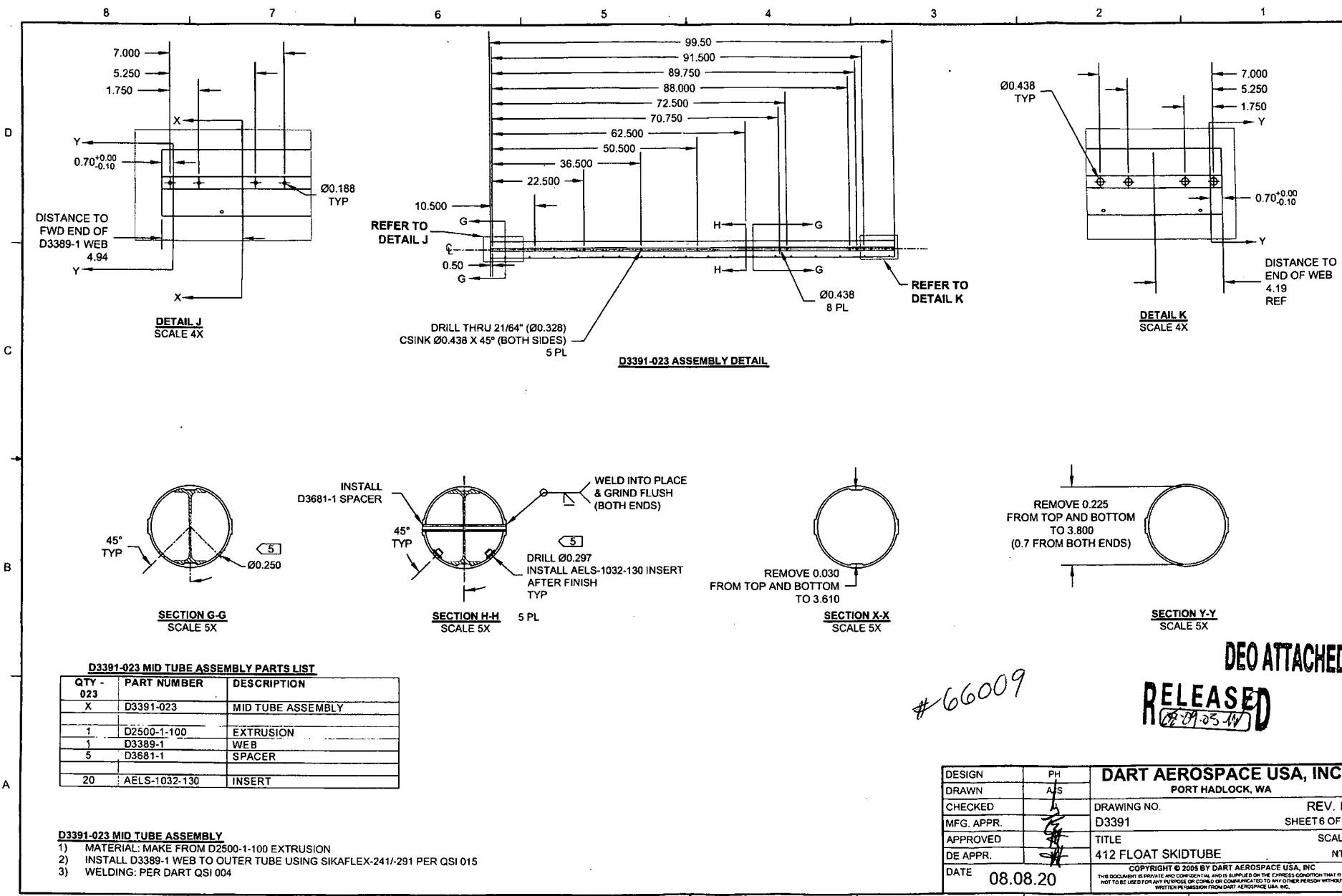
DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		
MFG. APPR.		DRAWING NO. REV. H
APPROVED		D3391 SHEET 4 OF 8
DE APPR.		TITLE
DATE	08.08.20	SCALE
		412 FLOAT SKIDTUBE NTS

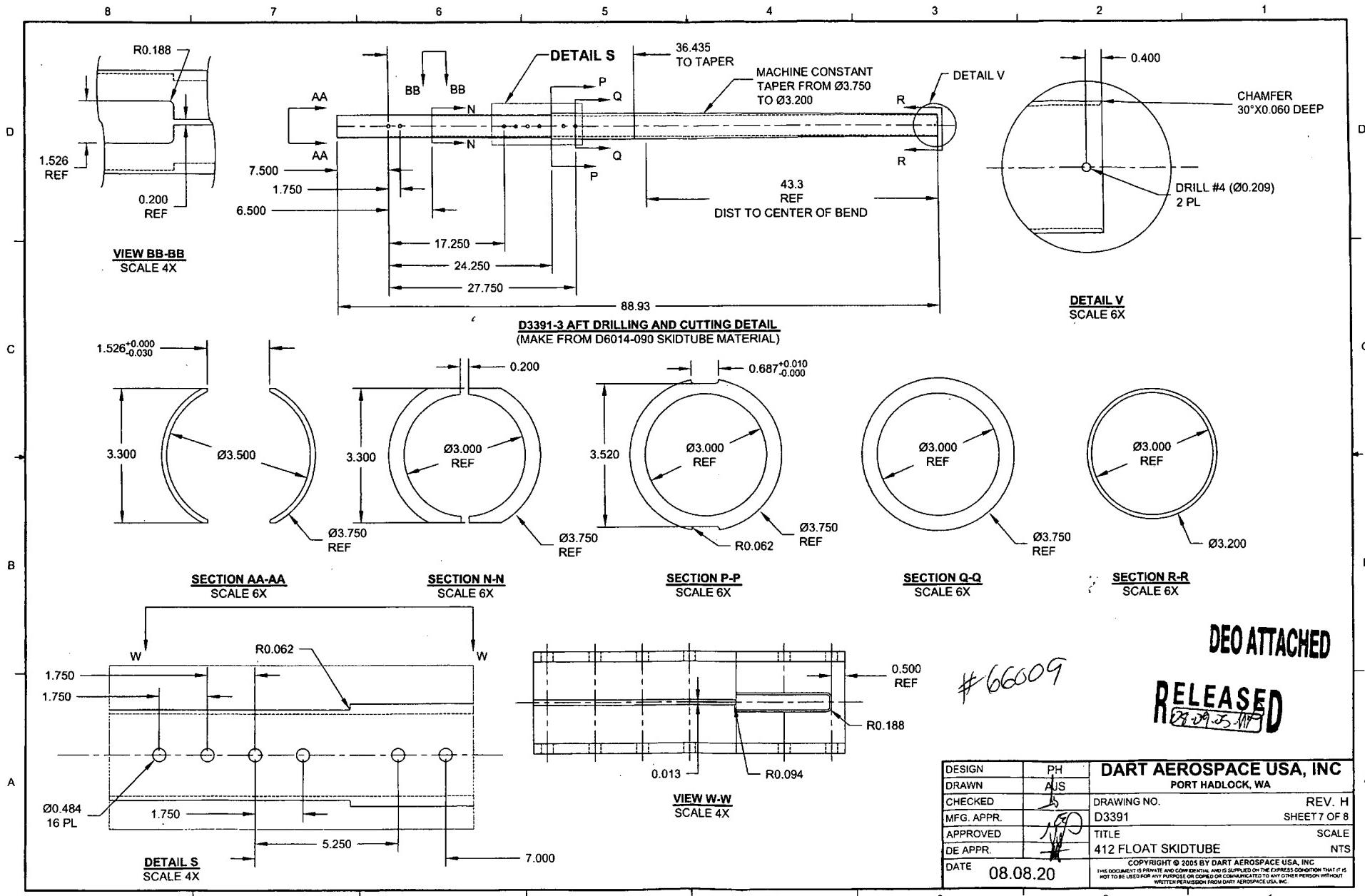
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08-09-05-10



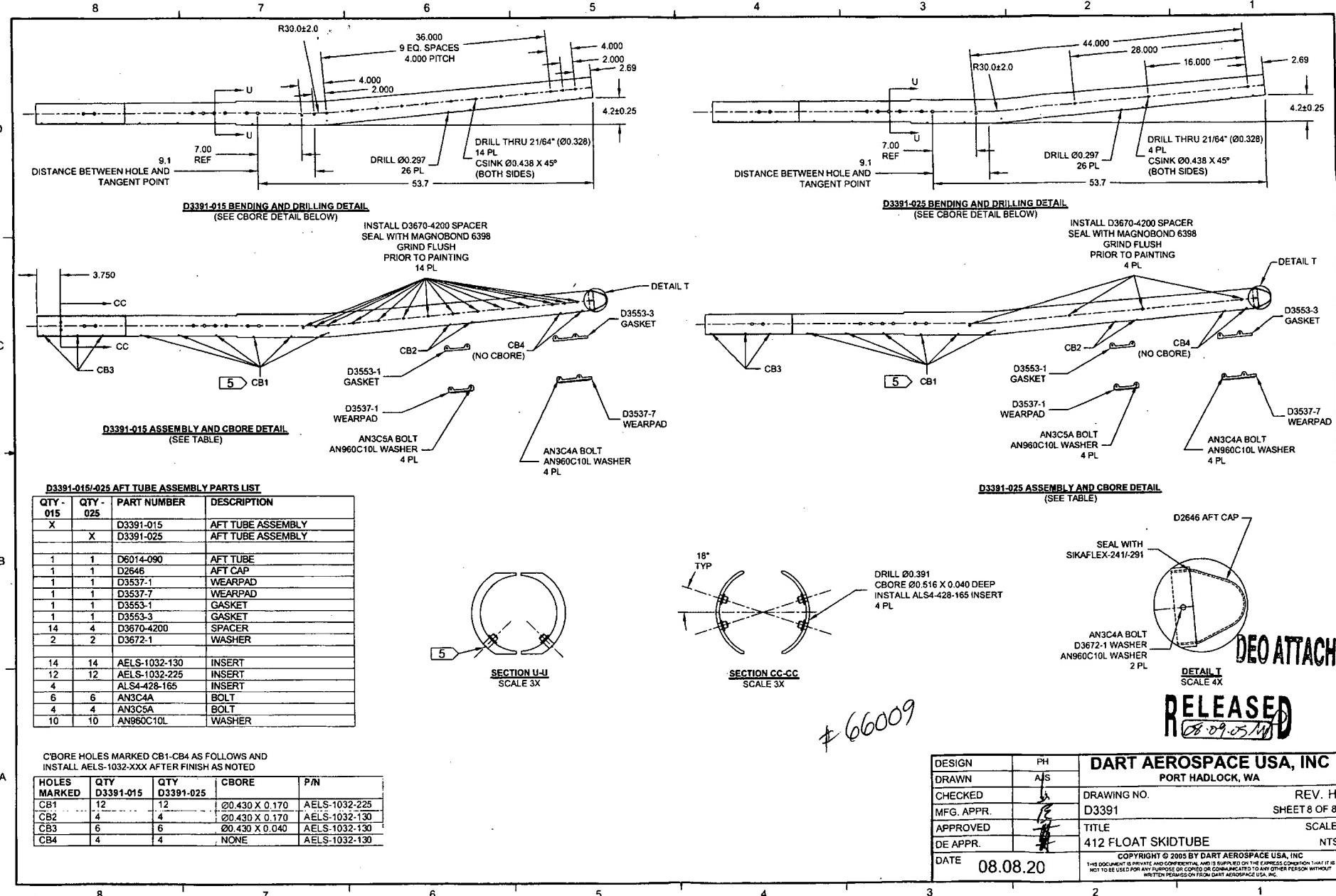




**DEO ATTACHED**

RELEASED  
09-09-05 WPD

DESIGN	PH	DART AEROSPACE USA, INC		
DRAWN	AUS	PORT HADLOCK, WA		
CHECKED	<i>S</i>	DRAWING NO.	REV. H	
MFG. APPR.	<i>NFO</i>	D3391	SHEET 7 OF 8	
APPROVED	<i>LW</i>	TITLE	SCALE	
DE APPR.	<i>LL</i>	412 FLOAT SKIDTUBE	NTS	
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CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	DART AEROSPACE USA, INC	
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MFG. APPR.		D3391	SHEET 8 OF 8
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DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>AA</i>	MFG. APPR.	APPROVED <i>MD</i>	DE APPR. <i>#</i>		
DATE 09.09.23	DATE 04.04.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30	DATE 09/09/30	

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

**RELEASED**  
2010-02-02

*MP*

*#66009*

